Alligator Snapping Turtle Culture at Tishomingo NFH

- Culture of alligator snapping turtles(AST) began in 2000 at Tishomingo NFH
    - 16 Adult (Broodstock) AST were captured by Daren Riedle (OSU Grad Student) at Sequoyah NWR by hoop nets and brought to Tishomingo NFH
    - The 16 individuals were placed inside a 2 ½ to 3 acre pond enclosed by a chain-linked fence
    - The pond was stocked with a multitude of forage for them to eat such as: Suckers, Golden Shiners, Shad, Catfish, and Sunfish before the AST were released
- Reason to rear AST at Tishomingo NFH
    - Historic population covered eastern half of Oklahoma , Current population limited to isolated pockets: Sequoyah NWR, Eufaula Reservoir, Kiamichi River, and Little River
    - Currently Listed as a Species of Special Concern in the state of Oklahoma
    - Hatchery had available tanks and ponds once fenced to hold and rear these turtles
- Reasons for AST decline
    - Habitat loss and alteration
    - Overharvest
        - Campbell's Soup harvested for Turtle Soup 1960 and 1970 (Prichard 1989)
    - Dams
    - Pet Trade
- Initial Objectives
    - Develop egg incubation/ hatching/ and rearing techniques
    - Collect age and growth data
    - Feed studies
    - Provide turtles for researchers
        - OSU and MSU (Daren Riedle & Day Ligon)
    - Reintroduction in Oklahoma and other interested states
        - Illinois & Possibly Tennessee
- Current # of turtles on station
    - 43 Adult AST (Broodstock)
    - 5 - 6yr olds
    - 10 - 5yr olds
    - 60 - 4yr old
    - 260 - 3yr old
    - 38 - 2yr old
    - 230 - 1yr old
    - Hatchling will know in Sept.

- Rearing Techniques used
    - Harvest eggs
        - 3 Broodstock Fenced ponds totaling 43 AST

        - Harvest occurs in late May early June time Frame
        - Eggs are excavated from nests along the pond shoreline
            - Each clutch has 15-40 eggs (average 25)
    - Incubation of eggs
        - Eggs brought from ponds are immediately placed into trays containing vermiculite and water (for moisture)
        - Trays are then placed into incubator set at 28°C
            - Sex Ratio @ 28°C results in 1.5 female to 1 male
            - Sex is determined by incubation temp (higher more females lower more males)
            - Incubation period is approximately 90 days
    - Hatchlings
        - Move from incubator to indoor tanks fill with shallow water
        - Clutches are kept separate until all turtle are ~3 months old and each will receive scute tags (simply fishing line tied to specified scutes for each clutch of turtles)
        - Diet consist of commercial fish and/or turtle food and cut bait (shad, suckers, sunfish, and shiners)
        - AST's spend first two years indoors to increase growth by controlling temperature if possible and easy access to commercial and natural feed
        - Between 2 and 3 yr old each turtle is PIT tagged in the rear thigh between the skin and muscle (Possible data obtained: individual growth, age, and release date when stocked)
        - Third year turtles are move to another Fenced pond stocked with forage (A real life experience for the juvenile turtles forces them to forage for food by themselves)
    - Stocking
        - After turtles have spent a year on there own turtles are ready to be released
        - Site selection
            - Determined by assessment of current population compared to historic population in that particular river drainage
            - Habitat availability
            - Accessibility and monitoring after release
        - Current and past stocking locations, dates, and number of turtles released
            - June 2006 trial stocking in Vian Creek on the Sequoyah NWR
                - 16 1-2 yr old AST were stocked each was PIT tagged and Radio Tagged
                - A seasonal employee tracked these 16 individuals for a summer recording movement and habitat selection
            - April 07 Transported ~250 adult AST from Arkansas to Oklahoma

        - 30 were kept here at the hatchery for additional broodstock
        - The rest were stocked into and around the Tishomingo NWR on Washita river drainage
        - 16 of these were equipped with radio transmitters to monitor movement and habitat selection
    - June 07
        - 16 4 yr old AST were stocked in the old Washita river channel equipped with radio transmitters and PIT tags
        - 5 were recaptured this year by Dan Moore (OSU Grad Student) Each had gained ~1 lb and 1" in Carapace length(top shell)
    - June 08
        - 90 - 3 and 4 yr old AST were stocked into the Caney River and its Tributaries above Hulah Lake
        - Each turtle was PIT tagged
        - 27 – 3&4 yr old AST transferred to Illinois DNR for reintroduction into the Big Muddy & Saline river
    - 2009
        - 60 – 4yr old AST were stocked into Caney river
        - 30 – 2yr old AST transferred to Illinois DNR
        - 66 – 2yr old AST stocked on Tishomingo NWR
    - 2010
        - 96- 3-6yr old AST stock into Caney River
- Transporting
    - Adults are placed into grain feed bags and ends are tied up
        - Turtles are not sedated
        - Then loaded into trailer or truck beds
        - With cooler temps turtle can survive for 2-3 days without water
    - Juvenile's are placed into plastic container or feed bags similar to adults but bags are smaller
- Recapture
    - Some of the turtles released into the Caney River have been recaptured and early findings are showing turtle doubling in size after one year of release.
- Handling
    - Adults can and will take fingers clean off
    - When handling adults experienced personal can grasp onto the carapace behind the head with one hand and towards the tail on the carapace with the other hand to pick up the individual
    - Transporting or handling is usually done by two people
    - Turtles are not sedated when measurement and observations are being taken

        - I wouldn't say they get mean but they do try to protect themselves because they don't know what your intentions are.
- Unique challenges
    - Not much information on how to culture turtles
        - Feed amounts
        - Rearing water temps
        - Adaptation from hatchery to the wild
    - Constantly learning information by trial and error
    - More research is needed